

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

Date of mailing: 01 March 2001 (01.03.01)	
International application No.: PCT/JP00/05523	Applicant's or agent's file reference: 2628WO0P
International filing date: 18 August 2000 (18.08.00)	Priority date: 20 August 1999 (20.08.99)
Applicant: OHKAWA, Shigenori et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:  
29 September 2000 (29.09.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer:  J. Zahra Telephone No.: (41-22) 338.83.38
---	---



P.B.5818 - Patentamt  
2280 HV Rijswijk (ZH)  
☎ +31 70 340 2040  
TX 31651 epo nl  
FAX +31 70 340 3016

Eur päisches  
Pat ntamt

Zweigstelle  
in Den Haag  
Recherchen-  
abteilung

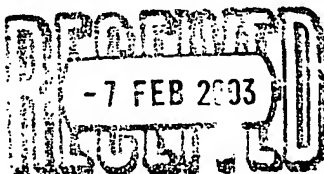
European  
Patent Office

Branch at  
The Hague  
Search  
division

Office uropéen  
des brevets

Département à  
La Haye  
Division de la  
recherche

Lewin, John Harvey  
Takeda Patent Office,  
11-12 Charles II Street  
London SW1Y 4QU  
GRANDE BRETAGNE



Datum/Date

06.02.03

Zeichen/Ref./Réf. <b>2628EPOW</b>	Anmeldung Nr./Application No./Demande n°./Patent Nr./Patent No./Brevet n°. <b>00953479.3-2117-JP0005523</b>
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire <b>Takeda Chemical Industries, Ltd.</b>	

## COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





Eur pean Patent  
Office

## SUPPLEMENTARY

## PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 00 95 3479  
shall be considered, for the purposes of subsequent  
proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P, X	EP 0 992 496 A (PFIZER PROD INC) 12 April 2000 (2000-04-12) compounds of formula (I), in particular group C(a) (see page 5, lines 40-43) ---	1	A61K31/407 A61K31/55 A61P9/10 A61P25/28 A61P25/16
Y	US 5 478 844 A (AONO TETSUYA ET AL) 26 December 1995 (1995-12-26) * column 1, line 336 - column 2, line 11; claims 1,9; table 1 * ---	1-32	A61P13/02 A61P9/08 C07D491/04 A61K31/425 A61K31/40
Y	EP 0 345 593 A (TAKEDA CHEMICAL INDUSTRIES LTD) 13 December 1989 (1989-12-13) * page 2, line 5 - page 2, line 22; claim 1; tables 2,3 * ---	1-32	
A	US 5 420 289 A (MUSSEY JOHN H ET AL) 30 May 1995 (1995-05-30) * column 3, line 55 - column 5, line 55 * -----	1-32	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			C07D A61K
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
<b>INCOMPLETE SEARCH</b>			
<p>The Search Division considers that the present application, or some or all of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for the following claims:</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>Reason for the limitation of the search:</p> <p>Although claims 25-28 are directed to a method of treatment of the human/animal body (Article 52(4) EPC), the search has been carried out and based on the alleged effects of the compound/composition.</p>			
Place of search		Date of completion of the search	Examiner
MUNICH		24 January 2003	Wörth, C
<b>CATEGORY OF CITED DOCUMENTS</b>			
<p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

2

EPO FORM 1503 03.82 (P04C20)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 95 3479

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-01-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0992496	A	12-04-2000	BR 9904162 A	12-09-2000
			EP 0992496 A1	12-04-2000
			JP 2000095764 A	04-04-2000
			US 6147089 A	14-11-2000
			US 6310075 B1	30-10-2001
US 5478844	A	26-12-1995	US 5594154 A	14-01-1997
			US 5770772 A	23-06-1998
			AT 127797 T	15-09-1995
			BR 1100381 A3	18-04-2000
			CA 2054619 A1	02-05-1992
			DE 69112989 D1	19-10-1995
			DK 483772 T3	22-01-1996
			EP 0483772 A1	06-05-1992
			ES 2077138 T3	16-11-1995
			GR 3017981 T3	29-02-1996
			HU 60258 A2	28-08-1992
			HU 9500528 A3	30-10-1995
			IE 913724 A1	22-05-1992
			IE 70668 B1	11-12-1996
			JP 2672423 B2	05-11-1997
			JP 5140142 A	08-06-1993
			KR 202463 B1	15-06-1999
			US 5376681 A	27-12-1994
			CN 1071165 A , B	21-04-1993
			CN 1174704 A	04-03-1998
			FI 921890 A	26-03-1993
			NO 921572 A	26-03-1993
			NO 973061 A	26-03-1993
			RU 2087473 C1	20-08-1997
EP 0345593	A	13-12-1989	AT 93231 T	15-09-1993
			CA 1339505 A1	21-10-1997
			DE 68908481 D1	23-09-1993
			DE 68908481 T2	09-12-1993
			EP 0345593 A1	13-12-1989
			JP 2076869 A	16-03-1990
			JP 2855340 B2	10-02-1999
			US 4978761 A	18-12-1990
US 5420289	A	30-05-1995	US 5229516 A	20-07-1993
			AU 4669493 A	31-01-1994
			MX 9304138 A1	29-04-1994
			WO 9401407 A2	20-01-1994
			AU 643996 B2	02-12-1993
			AU 7740491 A	31-05-1991

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 95 3479

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-01-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5420289      A		BR      9007790 A	15-09-1992
		CA      2070422 A1	28-04-1991
		EP      0502106 A1	09-09-1992
		FI      921865 A	24-04-1992
		HU      63407 A2	30-08-1993
		IE      903872 A1	22-05-1991
		JP      5502222 T	22-04-1993
		PT      95692 A	13-09-1991
		WO      9106537 A2	16-05-1991
		CA      2090042 A1	28-04-1991
<hr/>			



13

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

TAKAHASHI, Shuichi  
Osaka Plant of Takeda Chemical  
Industries, Ltd.  
17-85, Jusohonmachi 2-chome  
Yodogawa-ku  
Osaka-shi  
Osaka 532-0024  
JAPON

受付

00.11.20

知的財産部

Date of mailing (day/month/year) 06 November 2000 (06.11.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference 2628WO0P	
International application No. PCT/JP00/05523	
International publication date (day/month/year) Not yet published	
International filing date (day/month/year) 18 August 2000 (18.08.00)	Priority date (day/month/year) 20 August 1999 (20.08.99)
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD. et al	

- The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
- An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
20 Augu 1999 (20.08.99)	11/234718	JP	05 Octo 2000 (05.10.00)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Khemais BRAHMI

Telephone No. (41-22) 338.83.38

# PATENT COOPERATION TREATY

国務省	G·M	特許庁	長

PCT

## NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

TAKAHASHI, Shuichi  
Osaka Plant of Takeda Chemical  
Industries, Ltd.  
17-85, Jusohonmachi 2-chome  
Yodogawa-ku  
Osaka-shi  
Osaka 532-0024  
JAPON



Date of mailing (day/month/year) 01 March 2001 (01.03.01)		
Applicant's or agent's file reference 2628WOOP		IMPORTANT NOTICE
International application No. PCT/JP00/05523	International filing date (day/month/year) 18 August 2000 (18.08.00)	Priority date (day/month/year) 20 August 1999 (20.08.99)
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD. et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
AU, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:  
AE, AG, AL, AM, AP, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CR, CU, CZ, DM, DZ, EA, EE, EP, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, MZ, NO, NZ, OA, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, UZ, VN, YU, ZA  
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
01 March 2001 (01.03.01) under No. WO 01/14384

### REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

### REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38



## PATENT COOPERATION TREATY

PCT

INFORMATION CONCERNING ELECTED  
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To:

TAKAHASHI, Shuichi  
Osaka Plant of Takeda Chemical  
Industries, Ltd.  
17-85, Jusohonmachi 2-chome  
Yodogawa-ku  
Osaka-shi  
Osaka 532-0024  
JAPON

Date of mailing (day/month/year) 01 March 2001 (01.03.01)		
Applicant's or agent's file reference 2628WOOP		IMPORTANT INFORMATION
International application No. PCT/JP00/05523	International filing date (day/month/year) 18 August 2000 (18.08.00)	Priority date (day/month/year) 20 August 1999 (20.08.99)
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD. et al		

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

AP : GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW  
EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
National : AU, BG, CA, CN, CZ, IL, JP, KR, MN, NO, NZ, PL, RO, RU, SK, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
OA : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
National : AE, AG, AL, AM, AZ, BA, BB, BR, BY, BZ, CR, CU, DM, DZ, EE, GD, GE, HR, HU, ID, IN,  
IS, KG, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MX, MZ, SG, SI, TJ, TM, TR, TT, UA, UZ, VN, YU,  
ZA

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. (41-22) 740.14.35	Authorized officer:  J. Zahra  Telephone No. (41-22) 338.83.38
--	--

PATENT COOPERATION TREATY

12

PCT

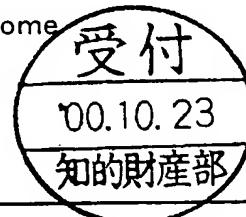
From the INTERNATIONAL BUREAU

NOTIFICATION OF RECEIPT OF  
RECORD COPY

(PCT Rule 24.2(a))

To:

TAKAHASHI, Shuichi  
Osaka Plant of Takeda Chemical  
Industries, Ltd.  
17-85, Jusohonmachi 2-chome  
Yodogawa-ku  
Osaka-shi  
Osaka 532-0024  
JAPON



Date of mailing (day/month/year) 13 September 2000 (13.09.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 2628WOOP	International application No. PCT/JP00/05523

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

TAKEDA CHEMICAL INDUSTRIES, LTD. (for all designated States except US)  
OHKAWA, Shigenori et al (for US)

International filing date : 18 August 2000 (18.08.00)  
Priority date(s) claimed : 20 August 1999 (20.08.99)  
Date of receipt of the record copy  
by the International Bureau : 04 September 2000 (04.09.00)  
List of designated Offices :

AP : GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW  
EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
OA : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
National : AE, AG, AL, AM, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU,  
ID, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, RU, SG, SI,  
SK, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA

## ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- ☒ time limits for entry into the national phase  
☒ confirmation of precautionary designations  
☒ requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Shinji IGARASHI

Telephone No. (41-22) 338.83.38

**INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE**

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated in the Notification of Receipt of Record Copy (Form PCT/IB/301) by paying national fees and furnishing translations, as prescribed by the applicable national laws.

The time limit for performing these procedural acts is **20 MONTHS** from the priority date or, for those designated States which the applicant elects in a demand for international preliminary examination or in a later election, **30 MONTHS** from the priority date, provided that the election is made before the expiration of 19 months from the priority date. Some designated (or elected) Offices have fixed time limits which expire even later than 20 or 30 months from the priority date. In other Offices an extension of time or grace period, in some cases upon payment of an additional fee, is available.

In addition to these procedural acts, the applicant may also have to comply with other special requirements applicable in certain Offices. It is the applicant's responsibility to ensure that the necessary steps to enter the national phase are taken in a timely fashion. Most designated Offices do not issue reminders to applicants in connection with the entry into the national phase.

For detailed information about the procedural acts to be performed to enter the national phase before each designated Office, the applicable time limits and possible extensions of time or grace periods, and any other requirements, see the relevant Chapters of Volume II of the PCT Applicant's Guide. Information about the requirements for filing a demand for international preliminary examination is set out in Chapter IX of Volume I of the PCT Applicant's Guide.

GR and ES became bound by PCT Chapter II on 7 September 1996 and 6 September 1997, respectively, and may, therefore, be elected in a demand or a later election filed on or after 7 September 1996 and 6 September 1997, respectively, regardless of the filing date of the international application. (See second paragraph above.)

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**CONFIRMATION OF PRECAUTIONARY DESIGNATIONS**

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date. If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with an indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.

**REQUIREMENTS REGARDING PRIORITY DOCUMENTS**

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity to furnish the priority document within a time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP00/05523

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.<sup>7</sup> C07D491/048, A61K31/407, 31/454, 31/55,  
A61P9/10, 25/28, 25/16, 13/02, 9/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.<sup>7</sup> C07D491/048, A61K31/407, 31/454, 31/55,  
A61P9/10, 25/28, 25/16, 13/02, 9/08

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
REGISTRY (STN), CAPLUS (STN), CAOLD (STN)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO, 97/07120, A1 (Smithkline Beecham P.L.C.), 27 February, 1997 (27.02.97), Claims; page 23, Example 5 & JP, 11-511156, A & EP, 1019412, A1 & US, 5972935, A	1-24, 29-32
A	WO, 95/29177, A1 (Smithkline Beecham P.L.C.), 02 November, 1995 (02.11.95), Claims; page 21, Example 2 & EP, 757687, A1 & JP, 9-512025, A	1-24, 29-32
A	JP, 5-339271, A (KOWA COMPANY, LTD), 21 December, 1993 (21.12.93), pp.3-4, Method 1 (Family: none)	1-24, 29-32
A	Dufresne, Claude, et al., 'The synthesis of phenylhydrazines from bis (2,2,2-trichloroethyl) azodicarboxylates and electron-rich arenes' Synth. Commun. (1997), Vol.27, No.20, p.3613-3624, Compound No. 22	1-24, 29-32

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
22 November, 2000 (22.11.00)

Date of mailing of the international search report  
05 December, 2000 (05.12.00)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP00/05523

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 25-28  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Claims 25 to 28 pertain to methods for treatment of the human body by therapy, and thus relate to subject matters which this International Searching Authority is not required, under the provisions of Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐

The additional search fees were accompanied by the applicant's protest.

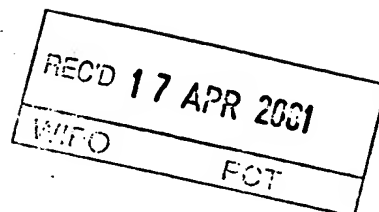
☐

No protest accompanied the payment of additional search fees.

PCT

国際予備審査報告

(法第12条、法施行規則第56条)  
[PCT36条及びPCT規則70]



出願人又は代理人 の書類記号 2628WOOP	今後の手続きについては、国際予備審査報告の送付通知(様式PCT/ IPEA/416)を参照すること。	
国際出願番号 PCT/JPO0/05523	国際出願日 (日.月.年) 18.08.00	優先日 (日.月.年) 20.08.99
国際特許分類(IPC) Int. Cl <sup>7</sup> C07D491/048, A61K31/407, 31/454, 31/55, A61P9/10, 25/28, 25/16, 13/02, 9/08		
出願人(氏名又は名称)  武田薬品工業株式会社		

1. 国際予備審査機関が作成したこの国際予備審査報告を法施行規則第57条(PCT36条)の規定に従い送付する。
2. この国際予備審査報告は、この表紙を含めて全部で 5 ページからなる。  <input type="checkbox"/> この国際予備審査報告には、附属書類、つまり補正されて、この報告の基礎とされた及び/又はこの国際予備審査機関に対してした訂正を含む明細書、請求の範囲及び/又は図面も添付されている。 (PCT規則70.16及びPCT実施細則第607号参照) この附属書類は、全部で _____ ページである。
3. この国際予備審査報告は、次の内容を含む。  I <input checked="" type="checkbox"/> 国際予備審査報告の基礎 II <input type="checkbox"/> 優先権 III <input checked="" type="checkbox"/> 新規性、進歩性又は産業上の利用可能性についての国際予備審査報告の不作成 IV <input type="checkbox"/> 発明の単一性の欠如 V <input checked="" type="checkbox"/> PCT35条(2)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明 VI <input type="checkbox"/> ある種の引用文献 VII <input type="checkbox"/> 国際出願の不備 VIII <input checked="" type="checkbox"/> 国際出願に対する意見

国際予備審査の請求書を受理した日 29.09.00	国際予備審査報告を作成した日 27.03.01	
名称及びあて先 日本国特許庁(IPEA/JP) 郵便番号100-8915 東京都千代田区霞が関三丁目4番3号	特許庁審査官(権限のある職員)  新留 豊	4C 9639
電話番号 03-3581-1101 内線 3452		

## I. 国際予備審査報告の基礎

1. この国際予備審査報告は下記の出願書類に基づいて作成された。(法第6条(PCT14条)の規定に基づく命令に  
応答するために提出された差し替え用紙は、この報告書において「出願時」とし、本報告書には添付しない。  
PCT規則70.16, 70.17)

☒ 出願時の国際出願書類

- |                          |            |   |       |        |                      |
|--------------------------|------------|---|-------|--------|----------------------|
| <input type="checkbox"/> | 明細書        | 第 | _____ | ページ、   | 出願時に提出されたもの          |
|                          | 明細書        | 第 | _____ | ページ、   | 国際予備審査の請求書と共に提出されたもの |
|                          | 明細書        | 第 | _____ | ページ、   | _____ 付の書簡と共に提出されたもの |
| <input type="checkbox"/> | 請求の範囲      | 第 | _____ | 項、     | 出願時に提出されたもの          |
|                          | 請求の範囲      | 第 | _____ | 項、     | PCT19条の規定に基づき補正されたもの |
|                          | 請求の範囲      | 第 | _____ | 項、     | 国際予備審査の請求書と共に提出されたもの |
|                          | 請求の範囲      | 第 | _____ | 項、     | _____ 付の書簡と共に提出されたもの |
| <input type="checkbox"/> | 図面         | 第 | _____ | ページ/図、 | 出願時に提出されたもの          |
|                          | 図面         | 第 | _____ | ページ/図、 | 国際予備審査の請求書と共に提出されたもの |
|                          | 図面         | 第 | _____ | ページ/図、 | _____ 付の書簡と共に提出されたもの |
| <input type="checkbox"/> | 明細書の配列表の部分 | 第 | _____ | ページ、   | 出願時に提出されたもの          |
|                          | 明細書の配列表の部分 | 第 | _____ | ページ、   | 国際予備審査の請求書と共に提出されたもの |
|                          | 明細書の配列表の部分 | 第 | _____ | ページ、   | _____ 付の書簡と共に提出されたもの |

2. 上記の出願書類の言語は、下記に示す場合を除くほか、この国際出願の言語である。

上記の書類は、下記の言語である \_\_\_\_\_ 語である。

- ☐ 国際調査のために提出されたPCT規則23.1(b)にいう翻訳文の言語  
☐ PCT規則48.3(b)にいう国際公開の言語  
☐ 国際予備審査のために提出されたPCT規則55.2または55.3にいう翻訳文の言語

3. この国際出願は、ヌクレオチド又はアミノ酸配列を含んでおり、次の配列表に基づき国際予備審査報告を行った。

- ☐ この国際出願に含まれる書面による配列表  
☐ この国際出願と共に提出されたフレキシブルディスクによる配列表  
☐ 出願後に、この国際予備審査(または調査)機関に提出された書面による配列表  
☐ 出願後に、この国際予備審査(または調査)機関に提出されたフレキシブルディスクによる配列表  
☐ 出願後に提出した書面による配列表が出願時における国際出願の開示の範囲を超える事項を含まない旨の陳述書の提出があった  
☐ 書面による配列表に記載した配列とフレキシブルディスクによる配列表に記載した配列が同一である旨の陳述書の提出があった。

4. 補正により、下記の書類が削除された。

- ☐ 明細書 第 \_\_\_\_\_ ページ  
☐ 請求の範囲 第 \_\_\_\_\_ 項  
☐ 図面 図面の第 \_\_\_\_\_ ページ/図

5. ☐ この国際予備審査報告は、補充欄に示したように、補正が出願時における開示の範囲を越えてされたものと認められるので、その補正がされなかったものとして作成した。(PCT規則70.2(c) この補正を含む差し替え用紙は上記1.における判断の際に考慮しなければならず、本報告に添付する。)

## Ⅲ. 新規性、進歩性又は産業上の利用可能性についての国際予備審査報告の不作成

1. 次にに関して、当該請求の範囲に記載されている発明の新規性、進歩性又は産業上の利用可能性につき、次の理由により審査しない。

☐ 国際出願全体

☒ 請求の範囲 25-28

理由：

☒ この国際出願又は請求の範囲 25-28 は、国際予備審査をすることを要しない次の事項を内容としている（具体的に記載すること）。

請求の範囲 25-28 は、治療による人体の処置方法に関するものであって、PCT 34 条 (4) (a) (i) 及び PCT 規則 67.1 (iv) の規定により、この国際予備審査機関が国際予備審査を行うことを要しない対象に係るものである。

☐ 明細書、請求の範囲若しくは図面（次に示す部分）又は請求の範囲 \_\_\_\_\_ の記載が、不明確であるため、見解を示すことができない（具体的に記載すること）。

☐ 全部の請求の範囲又は請求の範囲 \_\_\_\_\_ が、明細書による十分な裏付けを欠くため、見解を示すことができない。

☒ 請求の範囲 25-28 について、国際調査報告が作成されていない。

2. ヌクレオチド又はアミノ酸の配列表が実施細則の附属書 C（塩基配列又はアミノ酸配列を含む明細書等の作成のためのガイドライン）に定める基準を満たしていないので、有効な国際予備審査をすることができない。

☐ 書面による配列表が提出されていない又は所定の基準を満たしていない。

☐ フレキシブルディスクによる配列表が提出されていない又は所定の基準を満たしていない。



## V. 新規性、進歩性又は産業上の利用可能性についての法第12条(PCT35条(2))に定める見解、それを裏付ける文献及び説明

## 1. 見解

新規性(N)

請求の範囲

1-24, 29-32

有

請求の範囲

無

進歩性(IS)

請求の範囲

1-24, 29-32

有

請求の範囲

無

産業上の利用可能性(IA)

請求の範囲

1-24, 29-32

有

請求の範囲

無

## 2. 文献及び説明(PCT規則70.7)

文献1: WO, 97/07120, A1 (Smithkline Beecham P.L.C.), 27.2月.97 (27.02.97)

文献2: WO, 95/29177, A1 (Smithkline Beecham P.L.C.), 2.11月.95 (02.11.95)

文献3: JP, 5-339271, A (興和株式会社), 21.12月.1993 (21.12.93)

文献4: Dufresne, Claude, et al., 'The synthesis of phenylhydrazines from bis(2,2,2-trichloroethyl)azodicarboxylates and electron-rich arenes' Synth. Commun. (1997), Vol.27, No.20, p.3613-3624

## 説明:

文献1-4には、本願化合物と類似構造のフロインドール化合物、あるいはフロキノリン化合物が記載されている。

特許文献である文献1-3には、本願請求の範囲の化合物も含みうる包括的な構造式が記載されているが、本願請求の範囲に含まれる化合物は実際に製造されていない。

そして、文献1-4に記載の化合物はそれぞれセロトニン拮抗剤、抗不整脈あるいは他の化合物の原料として記載されているのみであり、本願の化合物が有する作用は記載されていない。

したがって、過酸化脂質生成抑制作用を有する本願の化合物を製造、使用することは、文献1-4の記載から当業者に自明でない。

よって、請求の範囲1-24, 29-32に係る発明は、進歩性を有する。

請求の範囲1-24, 29-32に係る発明は、産業上の利用可能性を有する。

## Ⅶ. 国際出願に対する意見

請求の範囲、明細書及び図面の明瞭性又は請求の範囲の明細書による十分な裏付についての意見を次に示す。

請求の範囲は、開示された実施例を合理的に一般化したもので、かつ該範囲に包含される化合物がすべて、発明の課題を実際に解決するものであるように記載されるべきである。本願の場合、実際に製造され試験された化合物が、比較的限定されたものである事を考慮すると、請求の範囲 1-13, 18-25, 30-33 が合理的で正当であると判断しうるかは疑問である。

上記請求の範囲に記載の「含窒素複素環基」、「芳香族複素環基」、「炭化水素基」、「プロドラッグ」等の表現、あるいは特定の置換基を明示せず、ただ「さらに置換されてもよい」とする表現は、当該表現が指摘ないし暗示する原子団において、どのような原子がどのような相互関係にあるのか、具体的に示されていない。これらについては明細書中で若干の例示があるのみで、さらに具体的に定義されることなく使用されているため、不明確かつ不確定的であり、出願人が主張する効果を奏さない想像上の化合物を想起させるものである。

加えて、上記例示を考慮して具体的な化合物が把握できたとしても、実際に製造・使用された化合物の範囲が狭いため、これらと同様の効果が全体にわたり十分推定されとは認められない。

上記請求の範囲はこれらの化合物を包含するため、該請求の範囲全体について十分な裏付けがあるとは認められない。

2. 請求の範囲 21-24, 30-32 に記載の各疾患について、本願化合物がこれらの治療に直接有用であることが漠然と記載されているのみで、データに基づく裏付けはない。そして、実際に確認されている過酸化脂質生成抑制作用と、これらの疾患との関連も直接的な因果関係を有するものとしては説明されていない。

したがって、上記請求の範囲に係る発明は十分に裏付けられていない。

11T  
Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2628WO0P	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP00/05523	International filing date (day/month/year) 18 August 2000 (18.08.00)	Priority date (day/month/year) 20 August 1999 (20.08.99)
International Patent Classification (IPC) or national classification and IPC C07D 491/048, A61K 31/407, 31/454, 31/55, A61P 9/10, 25/28, 25/16, 13/02, 9/08		
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.  <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application

Date of submission of the demand 29 September 2000 (29.09.00)	Date of completion of this report 27 March 2001 (27.03.2001)
Name and mailing address of the IPEA/JP  Facsimile No.	Authorized officer  Telephone No.

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 25-28

because:

☒ the said international application, or the said claims Nos. 25-28 relate to the following subject matter which does not require an international preliminary examination (*specify*):

The subject matter of Claims 25-28 relates to a method for treatment of the human body by therapy, which does not require an international preliminary examination by the International Preliminary Examining Authority in accordance with PCT Article 34(4)(a)(i) and Rule 67.1(iv).

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_ are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 25-28.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-24,29-32	YES
	Claims		NO
Inventive step (IS)	Claims	1-24,29-32	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-24,29-32	YES
	Claims		NO

**2. Citations and explanations**

Document 1: WO, 97/07120, A1 (Smithkline Beecham P. L. C.) 27 February 1997 (27.02.97)

Document 2: WO, 95/29177, A1 (Smithkline Beecham P. L. C.) 2 November 1995 (02.11.95)

Document 3: JP, 5-339271, A (Kowa Co., Ltd.) 21 December 1993 (21.12.93)

Document 4: Dufresne, Claude, et al., "The synthesis of phenylhydrazines from bis(2,2,2-trichloroethyl) azodicarboxylates and electron-rich arenes," Synth. Commun., Vol. 27, No. 20, 1997, pp. 3613-3624

Documents 1-4 describe furo-indole compounds or furo-quinoline compounds with structures similar to the compounds of this application.

Documents 1-3, which are patents, describe broad structural formulas that may include the compounds of the Claims of this application, but the compounds that may be included in the Claims of this application were not actually produced.

Furthermore, the compounds set forth in documents 1-4 are only described as starting materials for serotonin antagonists, anti-arrhythmic agents and other compounds, and the effects of the compounds of this application are not described.

Therefore, the production and use of the inventive compounds having inhibitory action against the formation of lipoperoxide is not self-evident to persons skilled in the art based on the descriptions in documents 1-4.

As a result, the inventions set forth in Claims 1-24 and 29-39 appear to involve an inventive step.

The inventions set forth in Claims 1-24 and 29-32 also appear to have industrial applicability.

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The Claims are a logical generalization of the Examples that are disclosed, and all compounds included within the scope of the Claims should be described such that they actually solve the inventive problem. In the case of this application, in light of the fact that the number of compounds actually produced and tested was relatively limited, it is impossible to decide if the scope of Claims 1-13, 18-25, and 30-33 is logically valid.

The expressions "heterocyclic group containing nitrogen," "aromatic heterocyclic group," "hydrocarbon group," "prodrug," and the like and expressions in which specific substituents are not delineated and the term "optionally substituted" is used do not specifically express what kinds of relationships exist between what kinds of atoms in the groups of atoms that these expressions refer to or imply. The Specification contains only a small number of Examples, and because these expressions are used without specific definitions, they are vague and imprecise, and it is possible to imagine compounds that do not bring about the effect asserted by the applicant.

Furthermore, even if it were possible to figure out specific compounds from the above Examples, because the scope of compounds that were actually produced and used is narrow, this examination finds that it is impossible to assume that all of the compounds will have effects similar to those in the Examples.

Therefore, this examination finds that because the Claims include these compounds, all the compounds of the Claims are insufficiently supported by the Specification.

2. With respect to the various diseases listed in Claims 21-24 and 30-32, there is only a vague statement that the inventive compounds are directly useful in the treatment of these diseases, and there is no data to support these assertions. In addition, the link between the action of inhibiting the formation of lipoperoxide, which has actually been verified, and these diseases is not explained as one having a direct cause-effect relationship.

Therefore, the inventions set forth in the above Claims are not sufficiently supported.

(19) 世界知的所有権機関  
国際事務局



(43) 国際公開日  
2001年3月1日 (01.03.2001)

PCT

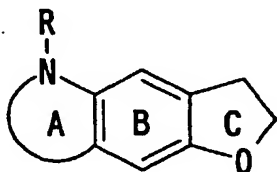
(10) 国際公開番号  
WO 01/14384 A1

- (51) 国際特許分類<sup>7</sup>: C07D 491/048, A61K 31/407, 31/454, 31/55, A61P 9/10, 25/28, 25/16, 13/02, 9/08
- (21) 国際出願番号: PCT/JP00/05523
- (22) 国際出願日: 2000年8月18日 (18.08.2000)
- (25) 国際出願の言語: 日本語
- (26) 国際公開の言語: 日本語
- (30) 優先権データ:  
特願平11/234718 1999年8月20日 (20.08.1999) JP
- (71) 出願人 (米国を除く全ての指定国について): 武田薬品工業株式会社 (TAKEDA CHEMICAL INDUSTRIES, LTD.) [JP/JP]; 〒541-0045 大阪府大阪市中央区道修町四丁目1番1号 Osaka (JP).
- (72) 発明者; および  
(75) 発明者/出願人 (米国についてのみ): 大川滋紀 (OHKAWA, Shigenori) [JP/JP]; 〒569-1121 大阪府高槻市真上町6丁目45番20号 Osaka (JP). 橋本忠俊 (HASHIMOTO, Tadatoshi) [JP/JP]; 〒567-0828 大阪府茨木市舟木町6番26-1301 Osaka (JP). 塚本徹哉 (TSUKAMOTO, Tetsuya) [JP/JP]; 〒674-0084 兵庫県明石市魚住町西岡2376番地の7 Hyogo (JP).
- (74) 代理人: 弁理士 高橋秀一, 外 (TAKAHASHI, Shuichi et al.); 〒532-0024 大阪府大阪市淀川区十三本町2丁目17番85号 武田薬品工業株式会社 大阪工場内 Osaka (JP).
- (81) 指定国 (国内): AE, AG, AL, AM, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, MZ, NO, NZ, PL, RO,

[続葉有]

(54) Title: TRICYCLIC DIHYDROBENZOFURAN DERIVATIVES, PROCESS FOR THE PREPARATION THEREOF AND AGENTS

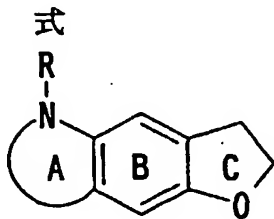
(54) 発明の名称: 三環性ジヒドロベンゾフラン誘導体、その製造法及び剤



(1)

(57) Abstract: Compounds represented by general formula (1) or salts thereof exhibit excellent inhibitory activity against the formation of peroxylipid and are useful as inhibitors against the formation thereof. In said formula, A is a nonaromatic five- to seven-membered nitrogenous heterocycle which may be additionally substituted; B is a benzene ring which is additionally substituted; C is a dihydrofuran ring which may be additionally substituted; and R is hydrogen or acyl.

(57) 要約:



〔式中、A環は更に置換基を有していてもよい非芳香族5ないし7員含窒素複素環を、B環は更に置換基を有するベンゼン環を、C環は更に置換基を有していてもよいジヒドロフラン環を、Rは水素原子又はアシル基を示す。〕で表される化合物又はその塩は、優れた過酸化脂質生成抑制作用を有し、過酸化脂質生成抑制剤として有用である。



WO 01/14384 A1





RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN, YU,  
ZA.

添付公開書類:

— 国際調査報告書

- (84) 指定国 (広域): ARIPO 特許 (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許 (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。